

Mr. Steve Keylor
Victory Environmental Services, Inc.
12247 South Mill Street
Terre Haute, IN Zip 47802

November 18, 2003

Re: 167-17803
First Significant Permit Modification to
Part 70 No.: T 167-9639-00116

Dear Mr. Keylor:

Victory Environmental Services, Inc. was issued a permit on July 12, 1999 for a municipal solid waste landfill. A letter requesting a flare addition to this permit was received on October 2, 2001. Pursuant to the provisions of 326 IAC 2-7-12 a significant permit modification to this permit is hereby approved as described in the attached Technical Support Document.

The addition consist of the following system: vertical gas extraction wells connected by a network of header piping that will be used to transport the collected landfill gas to a central point of service. Landfill gas will be collected from the landfill by inducing a vacuum on the wellfield using an in-line blower system. The collected landfill gas will then be routed to a utility flare with the following parameters: a maximum inlet flow of 3,000 scfm, design flame temperature of 1,400°F, flare tip height of 34 feet, flare tip diameter of 1 foot, spark plug igniter system, and a destruction efficiency of 98%.

All other conditions of the permit shall remain unchanged and in effect. Please attach a copy of this modification and the following revised permit pages to the front of the original permit.

This decision is subject to the Indiana Administrative Orders and Procedures Act - IC 4-21.5-3-5. If you have any questions on this matter, please contact Mr. Darren Woodward, Vigo County Air Pollution Control, 103 South Third Street, Terre Haute, Indiana, 47807, or call at (812) 462-3433, extension 15.

Sincerely,

Original Signed by George M. Needham
George M. Needham
Director
Vigo County Air Pollution Control

Attachments
DKW

cc: Mindy Hahn - IDEM
Winter Bottum - IDEM
Dan Magoun - Wabash Valley Development Corporation

PART 70 OPERATING PERMIT

OFFICE OF AIR QUALITY
and
VIGO COUNTY AIR POLLUTION CONTROL

Victory Environmental Services, Inc.
12247 South Mill Street
Terre Haute, Indiana 47802

(herein known as the Permittee) is hereby authorized to operate subject to the conditions contained herein, the source described in Section A (Source Summary) of this permit.

This permit is issued in accordance with 326 IAC 2 and 40 CFR Part 70 Appendix A and contains the conditions and provisions specified in 326 IAC 2-7 as required by 42 U.S.C. 7401, et. seq. (Clean Air Act as amended by the 1990 Clean Air Act Amendments), 40 CFR Part 70.6, IC 13-15 and IC 13-17.

Operation Permit No.: T167-9639-00116	
Issued by: Janet G. McCabe, Assistant Commissioner Office of Air Quality	Issuance Date: July 12, 1999
Significant Source Modification No.: 167-14898 Significant Permit Modification No.: 167-17803	Page(s) Affected: 2-4, and 30-46
Issued by: Original Signed by George M. Needham George M. Needham, Director Vigo County Air Pollution Control	Issuance Date: November 18, 2003

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SECTION A

SOURCE SUMMARY

This permit is based on information requested by the Indiana Department of Environmental Management (IDEM), Office of Air Management (OAM) and Vigo County Air Pollution Control (VCAPC). The information describing the source contained in conditions A.1 through A.3 is descriptive information and does not constitute enforceable conditions. However, the Permittee should be aware that a physical change or a change in the method of operation that may render this descriptive information obsolete or inaccurate may trigger requirements for the Permittee to obtain additional permits or seek modification of this permit pursuant to 326 IAC 2, or change other applicable requirements presented in the permit application.

A.1 General Information [326 IAC 2-7-4(c)] [326 IAC 2-7-5(15)]

The Permittee owns and operates a stationary municipal solid waste landfill.

Responsible Official:	Gary J. Brown, P.E. (Republic Industries, Inc.)
Source Address:	12247 South Mill Street, Terre Haute, Indiana 47802
Mailing Address:	6321 McBeth Road, Fort Wayne, Indiana 46809
SIC Code:	4953
County Location:	Vigo County
County Status:	Maintenance for Sulfur Dioxide (SO ₂) Attainment for all other criteria pollutants
Source Status:	Part 70 Permit Program Minor Source, under PSD

A.2 Emission Units and Pollution Control Equipment Summary [326 IAC 2-7-4(c)(3)] [326 IAC 2-7-5(15)]

This stationary source consists of the following emission units and pollution control devices:

- (a) One (1) municipal solid waste landfill with a design capacity of 16.77 million cubic yards (7.577 million megagrams (Mg)).
- (b) A system consisting of vertical gas extraction wells connected by a network of header piping that will be used to transport the collected landfill gas to a central point of service. Landfill gas will be collected from the landfill by inducing a vacuum on the wellfield using an in-line blower system. The collected landfill gas will then be routed to a utility flare for combustion.

A.3 Specifically Regulated Insignificant Activities [326 IAC 2-7-1(21)] [326 IAC 2-7-4(c)] [326 IAC 2-7-5(15)]

This stationary source does not currently have any insignificant activities, as defined in 326 IAC 2-7-1 (21) that have applicable requirements.

A.4 Part 70 Permit Applicability [326 IAC 2-7-2]

This stationary source is required to have a Part 70 permit by 326 IAC 2-7-2 (Applicability) because:

- (a) It is a major source, as defined in 326 IAC 2-7-1(22);

- (b) It is a source in a source category designated by the United States Environmental Protection Agency (U.S. EPA) under 40 CFR 70.3 (Part 70 - Applicability).

SECTION D.1 FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-7-5(15)]

- (a) One (1) municipal solid waste landfill with a design capacity of 16.77 million cubic yards (7.577 million megagrams (Mg)).
- (b) A system consisting of vertical gas extraction wells connected by a network of header piping that will be used to transport the collected landfill gas to a central point of service. Landfill gas will be collected from the landfill by inducing a vacuum on the wellfield using an in-line blower system. The collected landfill gas will then be routed to a utility flare for combustion.

Emission Limitations and Standards [326 IAC 2-7-5(1)]

D.1.1 General Provisions Relating to NSPS [326 IAC 12-1][40 CFR Part 60, Subpart A]

The provisions of 40 CFR Part 60, Subpart A - General Provisions, which are incorporated by reference in 326 IAC 12-1, apply to the facility described in this section except when otherwise specified in 40 CFR Part 60, Subpart WWW.

D.1.2 Municipal Solid Waste Landfill NSPS [326 IAC 12] [40CFR 60.752, Subpart WWW]

The municipal solid waste landfill has a design capacity greater than 2.5 million megagrams (Mg) and shall either comply with 40CFR 60.752 (b)(2) or calculate the non methane organic compound (NMOC) emission rate for the landfill using the procedures specified in 40CFR 60.754. (The Tier 1 analysis was submitted on June 10, 1996 and the initial Tier 2 analysis was submitted on June 4, 1996.)

D.1.3 Operational Standards for Collection and Control Systems [40CFR 60.753]

In order to comply with 40CFR 60.752 (b)(2)(ii) the Permittee shall:

- (1) Operate the collection system such that gas is collected from each area, cell, or group of cells in the municipal solid waste landfill in which solid waste has been in place for five years if active or 2 years or more if closed or at final grade.
- (2) Operate the collection system with negative pressure at each wellhead except under the following conditions:
 - (a) Fire or increased well temperature. The Permittee shall record instances when positive pressure occurs in efforts to avoid a fire. These records shall be submitted with the annual reports as provided in 40CFR 60.757(f)(1).
 - (b) Use of a geomembrane or synthetic cover. The Permittee shall develop acceptable pressure limits in the design plan.
 - (c) A decommissioned well. A well may experience a static positive pressure after shut down to accommodate for declining flows. All design changes shall be approved by the Office of Air Management (OAM) and VCAPC.
- (3) Operate each interior wellhead in the collection system with a landfill gas temperature less than 55°C and with either a nitrogen level less than 20 percent or an oxygen level less than

5 percent. The Permittee may establish a higher operating temperature, nitrogen, or oxygen value at a particular well. A higher operating value demonstration shall show supporting data that the elevated parameter does not cause fires or significantly inhibit anaerobic decomposition by killing methanogens.

- (a) The nitrogen level shall be determined using Method 3C, unless an alternative method is established as allowed by 40CFR 60.752 (b)(2)(i).
 - (b) Unless an alternative test method is established as allowed by 40CFR 60.752 (b)(2)(i), the oxygen shall be determined by an oxygen meter using Method 3A except that; the span shall be set so that the regulatory limit is between 20 and 50 percent of the span; a data recorder is not required; only two calibration gases are required, a zero and span, and ambient air may be used as the span; a calibration error check is not required; the allowable sample bias, zero drift, and calibration drift are ± 10 percent.
- (4) Operate the collection system so that the methane concentration is less than 500 parts per million above background at the surface of the landfill. To determine if this level is exceeded, the Permittee shall conduct surface testing around the perimeter of the collection area and along a pattern that traverses the landfill at 30 meter intervals and where visual observations indicate elevated concentrations of landfill gas, such as distressed vegetation and cracks or seeps in the cover. The Permittee may establish an alternative traversing pattern that ensures equivalent coverage. A surface monitoring design plan shall be developed that includes a topographical map with the monitoring route and the rationale for any site-specific deviations from the 30 meter intervals. Areas with steep slopes or other dangerous areas may be excluded from the surface testing.
 - (5) Operate the system such that all collected gases are vented to a control system designed and operated in compliance with 40CFR 60.752(b)(2)(iii). In the event the collection or control system is inoperable, the gas mover system shall be shut down and all valves in the collection and control system contributing to venting of the gas to the atmosphere shall be closed within one hour.
 - (6) Operate the control system at all times when the collected gas is routed to the system.
 - (7) If monitoring demonstrates that the operational requirement in 40CFR 60.753(b), (c), or (d) are not met, corrective action shall be taken as specified in 40CFR 60.755(a)(3) through (5) or 40CFR 60.755(c). If corrective actions are taken as specified in 40CFR 60.755, the monitored exceedance is not a violation of the operational requirements in 40CFR 60.753.

D.1.4 NESHAP for Asbestos Active Waste Disposal Sites [40 CFR 61.154]

In order to comply with 40 CFR 61.154 the Permittee must comply with the following:

- (1) allow no visible emissions to the outside air from any active waste disposal site where asbestos-containing waste material has been deposited, or comply with (2) or (3) below.
- (2) At least once every 24-hour period, asbestos-containing waste material that has been deposited during the previous 24-hour period must:
 - (a) be covered with at least 15 centimeters (6 inches) of compacted nonasbestos containing material, or
 - (b) be covered with a resinous or petroleum-based dust suppression agent that effectively binds dust and controls wind erosion. Such an agent shall be used in the manner and frequency recommended for the particular dust by the dust

suppression agent manufacturer to achieve and maintain dust control. Other equally effective dust suppression agents may be used upon prior approval by the Administrator. Any used, spent, or other waste oil is not considered a dust suppression agent.

- (3) Use an alternate emissions control method that has received prior written approval by the Administrator.
- (4) Also, unless a natural barrier deters access by the general public, warning signs and fencing must be installed or the requirements of paragraph (2)(a) above must be met.

Compliance Determination Requirements

D.1.5 Testing Requirements [326 IAC 2-7-6(1),(6)] [40CFR 60.754]

- (1) Pursuant to 40CFR 60.754(b):

After installation of a collection and control system in compliance with 40CFR 60.755, the Permittee shall calculate the non methane organic compound (NMOC) emission rate for purposes of determining when the system can be removed using the following equation:

$$M_{\text{NMOC}} = 1.89 \times 10^{-3} Q_{\text{LFG}} C_{\text{NMOC}}$$

where,

M_{NMOC} = mass emission rate of NMOC, megagrams per year

Q_{LFG} = flow rate of landfill gas, cubic meters per minute

C_{NMOC} = NMOC concentration, parts per million by volume as hexane

- (a) The flow rate of landfill gas, Q_{LFG} , shall be determined by measuring the total landfill gas flow rate at the common header pipe that leads to the control device using a gas flow measuring device calibrated according to the provisions of section 4 of Method 2E of appendix A of 40CFR 60.
 - (b) The average NMOC concentration, C_{NMOC} , shall be determined by collecting and analyzing landfill gas sampled from the common header pipe before the gas moving or condensate removal equipment using the procedures in Method 25C or Method 18 of appendix A of 40CFR 60. If using Method 18 of appendix A of 40CFR 60, the minimum list of compounds to be tested shall be those published in the most recent Compilation of Air Pollutant Emission Factors (AP-42). The sample location on the common header pipe shall be before any condensate removal or other gas refining units. The Permittee shall divide the NMOC concentration from Method 25 of appendix A of 40CFR 60 by six to convert from C_{NMOC} as carbon to C_{NMOC} as hexane.
 - (c) The Permittee may use another method to determine landfill gas flow rate and NMOC concentration if the method has been approved by the Administrator.
- (2) Pursuant to 40CFR 60.754(d):

For the performance testing required in 40CFR 60.752(b)(2)(iii)(B), Method 25 or Method 18 of appendix A of 40CFR 60 shall be used to determine compliance with 98 weight percent efficiency or the 20 ppmv outlet concentration level, unless another method to demonstrate compliance has been approved by the Office of Air Management (OAM) and VCAPC as provided by 40CFR 60.752(b)(2)(i)(B). If using Method 18 of appendix A, the minimum list

of compounds to be tested shall be those published in the most recent Compilation of Air Pollutant Emission Factors (AP-42). The following equation shall be used to calculate efficiency:

$$\text{Control Efficiency} = (\text{NMOC}_{\text{in}} - \text{NMOC}_{\text{out}}) / (\text{NMOC}_{\text{in}})$$

where,

NMOC_{in} = mass of NMOC entering the control device

NMOC_{out} = mass of NMOC exiting control device

Compliance Monitoring Requirements [326 IAC 2-7-6(1)] [326 IAC 2-7-5(1)]

D.1.6 Monitoring [40CFR 60.756]

Except as provided in 40CFR 60.752(b)(2)(i)(B),

- (1) The Permittee seeking to comply with 40CFR 60.752(b)(2)(ii)(A) for an active gas collection shall install a sampling port and a thermometer or other temperature measuring device, or an access port for temperature measurements at each wellhead and:
 - (a) Measure the gauge pressure in the gas collection header on a monthly basis as provided in 40CFR 60.755(a)(3);
 - (b) Monitor nitrogen or oxygen concentration in the landfill gas on a monthly basis as provided in 40CFR 60.755(a)(5); and
 - (c) Monitor temperature of the landfill gas on a monthly basis as provided in 40CFR 60.755(a)(5).
- (2) The Permittee seeking to comply with 40CFR 60.752(b)(2)(iii) using an enclosed combustor shall calibrate, maintain, and operate according to the manufacturer's specifications, the following equipment:
 - (a) A temperature monitoring device equipped with a continuous recorder and having a minimum accuracy of ± 1 percent of the temperature being measured expressed in degrees Celsius of ± 0.5 °C, whichever is greater. A temperature monitoring device is not required for boilers or process heaters with design heat input capacity greater than 44 megawatts.
 - (b) A device that records flow to or bypass of the control device. The Permittee shall either; install, calibrate, and maintain a gas flow rate measuring device that shall record the flow to the control device at least every fifteen (15) minutes; or secure the bypass line valve in the closed position with a car-seal or a lock-and-key type configuration. A visual inspection of the seal or closure mechanism shall be performed at least once every month to ensure that the valve is maintained in the closed position and that the gas flow is not diverted through the bypass line.
- (3) The Permittee seeking to comply with 40CFR 60.752(b)(2)(iii) using an open flare shall install, calibrate, maintain, and operate according to the manufacturer's specifications the following equipment:
 - (a) Heat sensing device, such as an ultraviolet beam sensor or thermocouple, at the pilot light or the flame itself to indicate the continuous presence of a flame

- (b) A device that records flow to or bypass of the flare.

The Permittee shall either install, calibrate, and maintain a gas flow rate measuring device that shall record the flow to the control device at least every fifteen minutes; or secure the bypass line valve in the closed position with a car-seal or a lock-and-key type configuration. A visual inspection of the seal or closure of the seal or closure mechanism shall be performed at least once every month to ensure that the valve is maintained in the closed position and that the gas flow is not diverted through the bypass line.

- (4) The Permittee seeking to comply with 40CFR 6.752(b)(2)(iii) using a device other than an open flare or an enclosed combustor shall provide information satisfactory to the Office of Air Management (OAM) and Vigo County Air Pollution Control (VCAPC) as provided in 40CFR 60.752(b)(2)(i)(B) describing the operation of the control device, the operating parameters that would indicate proper performance, and appropriate monitoring procedures. The Office of Air Management (OAM) and Vigo County Air Pollution Control (VCAPC) shall review the information and either approve it, or request that additional information be submitted. The Office of Air Management (OAM) and Vigo County Air Pollution Control (VCAPC) may specify additional monitoring procedures.
- (5) The Permittee seeking to install a collection system that does not meet the specifications in 40CFR 60.759 or seeking to monitor alternative parameters to those required by 40CFR 60.753 through 40CFR 60.756 shall provide information satisfactory to the Office of Air Management (OAM) and Vigo County Air Pollution Control (VCAPC) as provided in 40CFR 60.752(b)(2)(i)(B) and (C) describing the design and operation of the collection system, the operating parameters that would indicate proper performance, and appropriate monitoring procedures. The Office of Air Management (OAM) and Vigo County Air Pollution Control (VCAPC) may specify additional appropriate monitoring procedures.
- (6) The Permittee seeking to demonstrate compliance with 40CFR 60.755(c), shall monitor surface concentrations of methane according to the instrument specifications and procedures provided in 40CFR 60.755(d). Any closed landfill that has no monitored exceedances of the operational standard in three consecutive quarterly monitoring periods may skip to annual monitoring. Any methane reading of 500 ppm or more above background detected during the annual monitoring returns the frequency for that landfill to quarterly monitoring.

D.1.7 Compliance Provisions [40CFR 60.755]

- (1) Except as provided in 40CFR 60.752(b)(2)(i)(B), the specified methods below shall be used to determine whether the gas collection system is in compliance with 40CFR 60.752(b)(2)(i).
- (a) For the purpose of calculating the maximum expected gas generation flow rate from the landfill to determine compliance with 60.752(b)(2)(ii)(A)(1), one of the following equations shall be used. The k and L_0 kinetic factors should be those published in the most recent Compilation of Air Pollution Emission Factors (AP-42) or other site-specific values demonstrated to be appropriate and approved by the Office of Air Management (OAM) and Vigo County Air Pollution Control (VCAPC). If k has been determined as specified in 40CFR 60.754(a)(4), the value of k determined from the test shall be used. A value of no more than 15 years shall

be used for the intended use period of the gas mover equipment. The active life of the landfill is the age of the landfill plus the estimated number of years until closure.

For sites with unknown year-to-year solid waste acceptance rate:

$$Q_m = 2L_o R (e^{-kc} - e^{-kt})$$

where,

Q_m = maximum expected gas generation flow rate, cubic meters per year

L_o = methane generation potential, cubic meters per megagram solid waste

R = average annual acceptance rate, megagrams per year

k = methane generation rate constant, year⁻¹

t = age of the landfill at equipment installation plus the time the owner or operator intends to use the gas mover equipment or active life of the landfill, whichever is less. If the equipment is installed after closure, t is the age of the landfill at installation, years.

c = time since closure, years (for an active landfill $c = 0$ and $e^{-kc} = 1$)

For sites with known year-to-year solid waste acceptance rate:

$$Q_M = \sum_{i=1}^n 2 k L_o M_i (e^{-kt_i})$$

where,

Q_M = maximum expected gas generation flow rate, cubic meters per year

k = methane generation rate constant, year⁻¹

L_o = methane generation potential, cubic meters per megagram solid waste

M_i = mass of solid waste in the i^{th} section, megagrams

t_i = age of the i^{th} section, years

If a collection and control system has been installed, actual flow data may be used to project the maximum expected gas generation flow rate instead of, or in conjunction with, the equations in 40CFR 60.755(a)(1)(i) and (ii). If the landfill is still accepting waste, the actual measured flow data will not equal the maximum expected gas generation rate, so calculations using the equations in 40CFR 60.755(a)(1)(i) or (ii) or other methods shall be used to predict the maximum expected gas generation rate over the intended period of use of the gas control system equipment.

- (b) For the purposes of determining sufficient density of gas collector for compliance with 40CFR 60.752 (b)(2)(ii)(A)(2), the Permittee shall design a system of vertical wells, horizontal collectors, or other collection devices, satisfactory to the Office of Air Management (OAM) and Vigo County Air Pollution Control (VCAPC), capable of controlling and extracting gas from all portions of the landfill sufficient to meet all operational and performance standards.
- (c) For the purpose of demonstrating whether the gas collection system flow rate is sufficient to determine compliance with 40CFR 60.752(b)(2)(ii)(A)(3), the Permittee shall measure gauge pressure in the gas collection header at each individual well, monthly. If a positive pressure exists, action shall be initiated to correct the exceedance within five (5) calendar days, except for the three conditions allowed under 40CFR 60.753(b). If negative pressure cannot be achieved without excess air infiltration within fifteen (15) calendar days of the first measurement, the gas

- collection system shall be expanded to correct the exceedance with 120 days of the initial measurement of positive pressure. Any attempted corrective measure shall not cause exceedances of other operational or performance standards. An alternative timeline for correcting the exceedance may be submitted to the Administrator for approval.
- (d) The Permittee is not required to expand the system as required in 40CFR 60.755(a)(3) during the first 180 days after gas collection system start-up.
 - (e) For the purpose of identifying whether excess air infiltration into the landfill is occurring, the Permittee shall monitor each well monthly for temperature and nitrogen or oxygen as provided in 40CFR 60.753(c). If a well exceeds any of these operating parameters, action shall be initiated to correct the exceedance within five (5) calendar days. If correction of the exceedance cannot be achieved within fifteen (15) calendar days of the first measurement, the gas collection system shall be expanded to correct the exceedance within 120 days of the initial exceedance. Any attempted corrective measure shall not cause exceedances of other operational or performance standards. An alternative timeline for correcting the exceedance may be submitted to the Administrator for approval.
 - (f) If the Permittee seeks to demonstrate compliance with 40CFR 60.752(b)(2)(ii)(A)(4) through the use of a collection system not conforming to the specifications provided in 40CFR 60.759 shall provide information satisfactory to the Office of Air Management (OAM) and Vigo County Air Pollution Control (VCAPC) as specified in 40CFR 60.752 (b)(2)(i)(C) demonstrating that off-site migration is being controlled.
- (2) For purposes of compliance with 40CFR 60.753(a), the Permittee shall place each well or design component of a controlled landfill as specified in the approved design plan as provided in 40CFR 60.752(b)(2)(i). Each well shall be installed no later than 60 days after the date on which the initial solid waste has been in place for a period of five (5) years or more if active or two (2) years or more if closed or at final grade.
 - (3) The following procedures shall be used for compliance with the surface methane operational standard as provided in 40CFR 60.753 (d), the Permittee shall use the following procedures:
 - (a) After installation of the collection system, the Permittee shall monitor surface concentrations of methane along the entire perimeter of the collection area and along a pattern that traverses the landfill at 30 meter intervals (or a site-specific established spacing) for each collection area on a quarterly basis using an organic vapor analyzer, flame ionization detector, or other portable monitor meeting the specifications provided in 40CFR 60.755(d).
 - (b) The background concentration shall be determined by moving the probe inlet upwind and downwind outside the boundary of the landfill at a distance of at least 30 meters from perimeter wells.
 - (c) Surface emission monitoring shall be performed in accordance with section 4.3.1 of Method 21 of appendix A of 40CFR60, except that the probe inlet shall be placed within five(5) to ten(10) centimeters of the ground. Monitoring shall be performed during typical meteorological conditions.
 - (d) Any reading of 500 parts per million or more above background at any location

shall be recorded as a monitored exceedance and the actions specified in 40CFR 60.755(c)(4)(i) through (v) should be taken. As long as the specified actions are taken, the exceedance is not a violation of the operational requirements of 40CFR 60.753(d).

The location of each monitored exceedance shall be marked and the location recorded.

Cover maintenance or adjustments to the vacuum of the adjacent wells to increase the gas collection in the vicinity of each exceedance shall be made and the location shall be re-monitored with ten (10) calendar days of detecting the exceedance.

If the re-monitoring of the location shows a second exceedance, additional corrective action shall be taken and the location shall be monitored again within ten (10) days of the second exceedance. If re-monitoring shows a third exceedance for the same location, the action specified in paragraph 40CFR 60.755(c)(4)(v) of this section shall be taken, and no further monitoring of that location is required until the action specified in 40CFR 60.755(c)(4)(v) has been taken.

Any location that initially showed an exceedance but has a methane concentration less than 500 ppm methane above background at the 10-day re-monitoring specified in 40CFR 60.755(c)(4)(ii) or (iii) shall be re-monitored one (1) month from the initial exceedance. If the one (1)-month re-monitoring shows a concentration less than 500 parts per million above background, no further monitoring of that location is required until the next quarterly monitoring period. If the one (1)-month re-monitoring shows an exceedance, the actions specified in 40CFR 60.755(c)(4)(iii) or (v) shall be taken.

For any location where monitored methane concentration equals or exceeds 500 parts per million above background three times within a quarterly period, a new well or other collection device shall be installed within 120 calendar days of the initial exceedance. An alternative remedy to the exceedance, such as upgrading the blower, header pipes or control device, and a corresponding timeline for installation may be submitted to the Office of Air Management (OAM) and Vigo County Air Pollution Control (VCAPC) for approval.

- (e) The Permittee shall implement a program to monitor for cover integrity and implement cover repairs as necessary on a monthly basis.
- (4) The Permittee seeking to comply with the provisions of 40CFR 60.755(c) shall comply with the following instrumentation specifications and procedures for surface emission monitoring devices:
- (d) The portable analyzer shall meet the instrument specifications provided in section 3 of Method 21 of appendix A of 40CFR 60, except the "methane" shall replace all references to volatile organic compound (VOC).
 - (e) The calibration gas shall be methane, diluted to a nominal concentration of 500 parts per million in air.
 - (f) To meet the performance evaluation requirements in section 3.1.3 of Method 21 of appendix A of 40CFR 60, the instrument evaluation procedures of section 4.4 of Method 21 of appendix A of 40CFR 60 shall be used.

- (g) The calibration procedures provided in section 4.2 of Method 21 of appendix A of 40CFR 60 shall be followed immediately before commencing a surface monitoring survey.
- (8) The provisions of 40CFR 60.755 shall apply at all times, except during periods of start-up, shutdown, or malfunction, provided that the duration of start-up, shutdown, or malfunction, shall not exceed five (5) days for collection systems and shall not exceed one (1) hour for treatment or control devices.

Record Keeping and Reporting Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-19]

D.1.8 Non Methane Organic Compound (NMOC) Rate Calculation [40CFR 60.754]

Pursuant to 40CFR 60.754 the Permittee shall:

- (1) Calculate the non methane organic compound (NMOC) rate using either the equation provided in 40 CFR 60.754(a)(1)(i) or the equation provided in 40 CFR 60.754(a)(1)(ii). Both equations may be used if the actual year-to-year solid waste acceptance rate is known, as specified in 40 CFR 60.754(a)(1)(i), for part of the life of the landfill and the actual year-to-year solid waste acceptance rate is unknown, as specified in paragraph 40 CFR 60.754(a)(1)(ii), for a part of the life of the landfill. The values to be used in both equations are 0.05 per year for k , 170 cubic meters per megagram for L_o , and 4,000 parts per million by volume as hexane for the C_{NMOC} . For landfills located in geographical area with a thirty year annual average precipitation of less than 25 inches, as measured at the nearest representative official meteorologic site, the k value to be used is 0.02 per year. The following equation shall be used if the actual year-to-year solid waste acceptance rate is known:

$$M_{NMOC} = \sum_{i=1}^n k L_o M_i (e^{-kt_i}) (C_{NMOC}) (3.6 \times 10^{-9})$$

where,

M_{NMOC} = Total NMOC emission rate from the landfill, megagrams per year

k = methane generation rate constant, year⁻¹

L_o = methane generation potential, cubic meters per megagram solid waste

M_i = mass of solid waste in the i^{th} section, megagrams

t_i = age of the i^{th} section, years

C_{NMOC} = concentration of NMOC, parts per million by volume as hexane

3.6×10^{-9} = conversion factor

The mass of the nondegradable solid waste may be subtracted from the total mass of solid waste in a particular section of the landfill when calculating the value for M_i if documentation of the nature and amount of such wastes is maintained.

The following equation shall be used if the actual year-to-year solid waste acceptance rate is unknown:

$$M_{NMOC} = 2 L_o R (e^{-kt} - e^{-kt_c}) (C_{NMOC}) (3.6 \times 10^{-9})$$

where,

M_{NMOC} = mass emission rate of NMOC, megagrams per year

L_o = methane generation potential, cubic meters per megagram solid waste

R = average annual acceptance rate, megagrams per year

k = methane generation rate constant, year⁻¹

t = age of landfill, years

C_{NMOC} = concentration of NMOC, parts per million by volume as hexane

c = time since closure, years. For active landfill $c = 0$ and $e^{kc} = 1$
 3.6×10^{-9} = conversion factor

The mass of the nondegradable solid waste may be subtracted from the total mass of solid waste in a particular section of the landfill when calculating the value for M_i if documentation of the nature and amount of such wastes is maintained.

2. Tier 1. The Permittee shall compare the calculated NMOC mass emission rate to the standard of 50 megagrams per year.

If the NMOC emission rate calculated in 40CFR 60.754(a)(1) is less than 50 megagrams per year, then the landfill owner shall submit an emission rate report as provided in 40CFR 60.757(b)(1), and shall recalculate the NMOC mass emission rate annually as required under 40CFR 60.752(b)(1). If the calculated NMOC emission rate is equal to or greater than 50 megagrams per year, then the Permittee shall either comply with 40CFR 60.752(b)(2), or determine a site-specific NMOC concentration and recalculate the NMOC emission rate using the procedures provided in 40CFR 60.754(a)(3).

Tier 2. The Permittee shall determine the NMOC concentration using the following sampling procedure. The Permittee shall install at least two sample probes per hectare of landfill surface that has retained waste for at least 2 years. If the landfill is larger than 25 hectares in area, only 50 samples are required. The sample probes should be located to avoid known areas of nondegradable solid waste. The Permittee shall collect and analyze one sample of landfill gas from each probe to determine the NMOC concentration using Method 25C of appendix A of 40 CFR 60 or Method 18 of appendix A of 40 CFR 60. If using Method 18 of appendix A of 40 CFR 60, the minimum list of compounds to be tested shall be those published in the most recent Compilation of Air Pollutant Emission Factors (AP-42). If composite sampling is used, equal volumes shall be taken from each sample probe. If more than the required number of samples are taken, all samples shall be used in analysis. The Permittee shall divide the NMOC concentration from Method 25C of appendix A by six to convert from C_{NMOC} as carbon to C_{NMOC} as hexane.

The Permittee shall recalculate the NMOC mass emission rate using the equations provided in 40CFR 60.754(a)(1)(i) and (a)(1)(ii) and using the average NMOC concentration from the collected samples instead of the default value in the equation provided in 40CFR 60.754(a)(1).

If the resulting mass emission rate calculated using the site-specific NMOC concentration is equal to or greater than 50 megagrams per year, then the Permittee shall either comply with 40CFR 60.752(b)(2), or determine the site-specific methane generation rate constant and recalculate the NMOC emission rate using the site-specific methane generation rate using the procedure specified in 40CFR 60.754(a)(4).

If the resulting NMOC mass emission rate is less than 50 megagrams per year, the Permittee shall submit a periodic estimate of the emission rate report as provided in 40CFR 60.757(b)(1) and retest the site-specific NMOC concentration every five (5) years using the methods in 40CFR 60.754(a)(3).

Tier 3. The site-specific methane generation rate constant shall be determined using the procedures provided in Method 2E of appendix A of 40 CFR 60. The Permittee shall estimate the NMOC mass emission rate using equations in 40 CFR 60.754(a)(1)(i) or (a)(1)(ii) and using a site-specific methane generation rate constant k , and the site-specific NMOC concentration as determined in 40 CFR 60.754(a)(3) instead of the default values provided in 40 CFR 60.754(a)(1). The Permittee shall compare the resulting NMOC mass emission rate to the standard of 50 megagrams per year.

If the NMOC mass emission rate as calculated using the site-specific methane generation rate and concentration of NMOC is equal to or greater than 50 megagrams per year, the Permittee shall comply with 40CFR 60.752(b)(2).

If the NMOC mass emission rate is less than 50 megagrams per year, then the Permittee shall submit a periodic emission rate report as provided in 40CFR 60.757(b)(1) and shall recalculate the NMOC mass emission rate annually, as provided in 40CFR 60.757(b)(1) using the equations in 40CFR 60.754(a)(1) and using the site-specific methane generation rate constant and NMOC concentration obtained in 40CFR 60.754(a)(3). The calculation of the methane generation rate constant is performed only once, and the value obtained from this test shall be used in all subsequent annual NMOC emission rate calculations.

The Permittee may use other methods to determine the NMOC concentration or a site-specific k as an alternative to the methods required in 40CFR 60.754(a)(3) and (a)(4) if the method has been approved by the Administrator.

3. When calculating emissions for PSD purposes, the owner or operator of each municipal solid waste landfill subject to 40CFR 60.754 shall estimate the NMOC emission rate for comparison to the PSD major source and significance levels in 40CFR 51.166 or 40CFR 52.21 using AP-42 or other approved measurement procedures. If a collection system, which complies with the provisions of 40CFR 60.752(b)(2) is already installed, the Permittee shall estimate the NMOC emission rate using the procedures provided in 40CFR 60.754(b).

The Permittee's initial NMOC (Tier 1) report was submitted on June 10, 1996. The Permittee's initial Tier 2 analysis was submitted on June 6, 1996.

D.1.9 Reporting Requirements [40CFR 60.757]

Pursuant to 40CFR 60.757, except as provided in 40CFR 60.752(b)(2)(i)(B), the Permittee shall:

- (1) Submit an initial design capacity report to the Office of Air Management (OAM) and Vigo County Air Pollution Control (VCAPC) no later than 90 days after October 8, 1997. An amended design capacity report shall be submitted to the Office of Air Management (OAM) and Vigo County Air Pollution Control (VCAPC) providing notification of any increase in the design capacity of the landfill. The Permittee's initial design capacity report was submitted on June 10, 1996.
- (2) Submit a non methane organic compound (NMOC) emission rate report to the Office of Air Management and Vigo County Air Pollution Control (VCAPC) initially and annually thereafter, except as provided for in 40CFR 60.757(b)(1)(ii) or (b) (3). The Office of Air Management (OAM) and Vigo County Air Pollution Control (VCAPC) may request such additional information as may be necessary to verify the reported NMOC emission rate. The report should contain an annual or 5-year estimate of the non methane organic compound (NMOC) emission rate using the formula and procedures provided in 40CFR 60.754 (a) or (b), as applicable. The initial NMOC emission rate report may be combined with the initial design capacity report required in 40CFR 60.757(a) and shall be submitted no later than indicated in paragraphs 40 CFR 60.757(b)(1)(i)(A) and (B). June 10, 1996, for landfills that commenced construction, modification, or reconstruction on or after May 30, 1991, but before March 12, 1996, or ninety days after the date of commenced construction, modification, or reconstruction on or after March 12, 1996. Subsequent NMOC emission rate reports shall be submitted annually thereafter, except as provided in 40CFR 60.757(b)(1)(ii) and (b)(3). If the estimated NMOC emission rate as reported in the annual report to the Office of Air Management (OAM) and Vigo County Air Pollution Control (VCAPC) is less than 50 megagrams per year in each of the next five (5) consecutive years, the Permittee may elect to submit an estimate of the NMOC emission rate for the next five (5) year period in lieu of the annual report. This estimate shall include the current amount of solid waste-in-place and the estimated waste acceptance rate for each year of

the five (5) years for which as NMOC emission rate is estimated. All data and calculations upon which this estimate is based shall be provided to the Office of Air Management (OAM) and Vigo County Air Pollution Control (VCAPC).

This estimate shall be revised at least once every five (5) years. If the actual waste acceptance rate exceeds the estimated waste acceptance rate in any year reported in the five (5) year estimate, a revised five (5) year estimate shall be submitted to the Office of Air Management and Vigo County Air Pollution Control (VCAPC). The revised estimate shall cover the five (5) year period beginning with the year in which the actual waste acceptance rate exceeded the estimated waste acceptance rate. The NMOC emission rate report shall include all the data, calculations, sample reports, and measurements used to estimate the annual or five (5) year emission rate. The Permittee is exempted from the requirements of 40CFR 60.757(b)(1) and (2) after the installation of a collection and control system in compliance with 40CFR 60.752 (b)(2), during such time as the system is in operation and in compliance with 40CFR 60.753 and 60.755.

- (3) Submit a collection and control system design plan to the Office of Air Management (OAM) and Vigo County Air Pollution Control (VCAPC) within one (1) year of the first non methane organic compound (NMOC) emission rate report, required under 40CFR 60.757(b), in which NMOC emission rate exceeds 50 megagrams (Mg) per year; except if the Permittee elects to recalculate the NMOC emission rate after Tier 2 sampling and analysis as provided in 40CFR 60.754(a)(3) and the resulting rate is less than 50 megagrams per year, annual periodic reporting shall be resumed, using the Tier 2 determined site-specific NMOC concentration, until the calculated emission rate is equal to or greater than 50 megagrams per year or the landfill is closed. The revised NMOC emission rate report, with the recalculated emission rate based on NMOC sampling and analysis, shall be submitted within 180 days of the first calculated exceedance of 50 megagrams per year. If the Permittee elects to recalculate the NMOC emission rate after determining a site-specific methane generation rate constant (k), as provided in Tier 3 in 40CFR 60.754(a)(4), and the resulting NMOC emission rate is less than 50 megagrams per year, annual periodic reporting shall be resumed. The resulting site-specific methane generation rate constant (k) shall be used in the emission rate calculation until such time as the emissions rate calculation results in an exceedance. The revised NMOC emission rate report based on the provisions of 40CFR 60.754(a)(4) and the resulting site-specific methane generation rate constant (k) shall be submitted to the Office of Air Management (OAM) and Vigo County Air Pollution Control (VCAPC) within one (1) year of the first calculated emission rate exceeding 50 megagrams per year.
- (4) Submit a closure report to the Office of Air Management (OAM) and Vigo County Air Pollution Control (VCAPC) within thirty days of waste acceptance cessation. The Office of Air Management (OAM) and Vigo County Air Pollution Control (VCAPC) may request additional information as may be necessary to verify that permanent closure has taken place in accordance with the requirements of 40CFR 258.60. If a closure report has been submitted to the Office of Air Management (OAM) and Vigo County Air Pollution Control (VCAPC), no additional wastes may be placed into the landfill without filing a notification of modification as described under 40CFR 60.7(a)(4).
- (5) Submit an equipment removal report to the Office of Air Management (OAM) and Vigo County Air Pollution Control (VCAPC) thirty (30) days prior to removal or cessation of operation of the control equipment. The equipment removal report shall contain all of the following items: a copy of the closure report submitted in accordance with 40CFR 60.757(d), a copy of the initial performance test report demonstrating that the fifteen (15) year minimum control period has expired, and dated copies of three (3) successive NMOC emission rate reports demonstrating that the landfill is no longer producing 50 megagrams

or greater of NMOC per year. The Office of Air Management (OAM) and Vigo County Air Pollution Control (VCAPC) may request such additional information as may be necessary to verify that all of the conditions for removal in 40CFR 60.752(b)(2)(v) have been met.

- (6) Annual reports of the following recorded information. The initial annual report shall be submitted within 180 days of installation and start-up of the collection and control system, and shall include the initial performance test report required under 40CFR 60.8. For enclosed combustion devices and flares, reportable exceedances are defined under 40CFR 60.756(a), (b), (c), and (d).
- (a) Value and length of time for exceedance of applicable parameters monitored under 40CFR 60.756(a), (b), (c), and (d).
 - (b) Description and duration of all periods when the gas stream is diverted from the control device through a bypass line or the indication of bypass flow as specified under 40CFR 60.756.
 - (c) Description and duration of all periods when the control device was not operating for a period exceeding one (1) hour and length of time the control device was not operating.
 - (d) All periods when the collection system was not operating in excess of five (5) days.
 - (e) Location of each exceedance of the 500 parts per million methane concentration as provided in 40CFR 60.753(d) and the concentration recorded at each location for which an exceedance was recorded in the previous month.
 - (f) Date of installation and the location of each well or collection system expansion added pursuant to 40CFR 60.755(a)(3), (b), and (c)(4).
- (7) The Permittee seeking to comply with 40CFR 40.752(b)(2)(iii) shall include the following information with the initial performance test report required under 40CFR 60.8:
- (a) A diagram of the collection system showing collection system positioning including all wells, horizontal collectors, surface collectors, or other gas extraction devices, including the locations of any areas excluded from collection and the proposed sites for the future collection system expansion.
 - (b) The data upon which the sufficient density of wells, horizontal collectors, surface collectors, or other gas extraction devices and the gas mover equipment sizing are based.
 - (c) The documentation of the presence of asbestos or nondegradable material for each area from which collection wells have been excluded based on the presence of asbestos or nondegradable material.
 - (d) The sum of the gas generation flow rates for all areas from which collection wells have been excluded based on nonproductivity and the calculations of gas generation flow rate for each excluded area.
 - (e) The provisions for increasing gas mover equipment capacity with increased gas generation flow rate, if the present gas mover equipment is inadequate to move the maximum flow rate expected over the life of the landfill

- (f) The provision for the control of off-site migration.
- (8) A summary of the above information shall be submitted to the address listed in Section C - General Reporting Requirements, of this permit.
The Permittee's Tier 1 analysis was submitted on June 10, 1996. The Permittee's Tier 2 analysis was submitted on June 6, 1996.

D.1.10 Recordkeeping for NESHAP for Asbestos Active Waste Disposal Sites [40 CFR 61.154]

- (a) For all asbestos containing waste material received, the owner or operator of the active waste disposal site shall:
 - (1) Maintain waste shipment records, using a form similar to that shown in figure 4 of 40 CFR 61, Subpart M, and include the following information
 - (i) The name, address, and telephone number of the waste generator;
 - (ii) The name, address, and telephone number of the transporter(s);
 - (iii) The quantity of the asbestos containing waste material in cubic meters (cubic yards).
 - (iv) The presence of improperly enclosed or uncovered waste, or any asbestos-containing waste material not sealed in leak-tight containers. Report in writing to the local, State, or EPA Regional office responsible for administering the asbestos NESHAP program for the waste generator (identified in the waste shipment record), and if different, the local, State, or EPA Regional office responsible for administering the asbestos NESHAP program for the disposal site, by the following working day, the presence of a significant amount of improperly enclosed or uncovered waste. Submit a copy of the waste shipment record along with the report.
 - (v) The date of the receipt.
 - (2) As soon as possible and no longer than 30 days after receipt of the waste, send a copy of the signed waste shipment record to the waste generator.
 - (3) Upon discovering a discrepancy between the quantity of waste designated on the waste shipment records and the quantity actually received, attempt to reconcile the discrepancy with the waste generator. If the discrepancy is not resolved within 15 days after receiving the waste, immediately report in writing to the local, State, or EPA Regional office responsible for administering the asbestos NESHAP program for the waste generator (identified in the waste shipment record), and if different, the local, State, or EPA Regional office responsible for administering the asbestos NESHAP program for the disposal site. Describe the discrepancy and attempts to reconcile it, and submit a copy of the waste shipment record along with the report.
 - (4) Retain a copy of all records and reports required by this paragraph for at least 2 years.
- (b) Maintain until closure, records of the location, depth and area, and quantity in cubic meters (cubic yards) of asbestos-containing waste material within the disposal site on a map or diagram of the disposal area.
- (c) Upon closure, comply with all the provisions of 40 CFR 61.151.
- (d) Submit to the Administrator, upon closure of the facility, a copy of records of asbestos waste disposal locations and quantities.

- (e) Furnish upon request, and make available during normal business hours for inspection by the Administrator, all records required under this section.
- (f) Notify the Administrator in writing at least 45 days prior to excavating or otherwise disturbing any asbestos-containing waste material that has been deposited at a waste disposal site and is covered. If the excavation will begin on a date other than the one contained in the original notice, notice of the new start date must be provided to the Administrator at least 10 working days before excavation begins and in no event shall excavation begin earlier than the date specified in the original notification. Include the following information in the notice:
 - (1) Scheduled starting and completion dates.
 - (2) Reason for disturbing the waste.
 - (3) Procedures to be used to control emissions during the excavation, storage, transport, and ultimate disposal of the excavated asbestos-containing waste material. If deemed necessary, the Administrator may require changes in the emission control procedures to be used.
 - (4) Location of any temporary storage site and the final disposal site.

D.1.11 Record Keeping Requirements [326 IAC 12] [40CFR 60.758]

Pursuant to 40CFR 60.758:

- (1) Except as provided in 40 CFR 60.752(b)(2)(i)(B), the Permittee subject to 40CFR 60.752(b) shall keep for at least 5 years up-to-date, readily accessible, on-site records of the design capacity report which triggered 40 CFR 60.752(b), the current amount of solid waste in-place, and the year-by-year waste acceptance rate. Off-site records may be maintained if they are retrievable within four (4) hours. Either paper copy or electronic formats are acceptable.
- (2) Except as provided in 40 CFR 60.752(b)(2)(i)(B), the Permittee of a controlled landfill shall keep up-to-date, readily accessible records for the life of the control equipment listed in (a) through (d) below as measured during the initial performance test or compliance determination. Records of subsequent tests or monitoring shall be maintained for a minimum of five (5) years. Records of control device vendor specifications shall be maintained until removal.
 - (a) Where the Permittee subject to the provisions of 40CFR 60.758 seeks to demonstrate compliance with 40CFR 60.752(b)(2)(ii):

The maximum expected gas generation flow rate as calculated in 40CFR 60.755(a)(1). The Permittee may use another method to determine the maximum gas generation flow rate, if the method has been approved by the Office of Air Management (OAM).

The density of wells, horizontal collectors, surface collectors, or other gas extraction devices determined using the procedures specified in 40CFR 60.759(a)(1).
 - (b) Where the Permittee subject to the provisions of 40CFR 60.758 seeks to demonstrate compliance with 40CFR 60.752(b)(2)(iii) through use of an enclosed combustion device other than a boiler or process heater with a design heat input capacity greater than 44 megawatts:

The average combustion temperature measured at least every fifteen (15) minutes and averaged over the same time period of the performance test.

The percent reduction of NMOC determined as specified in 40CFR 60.752(b)(2)(iii)(B) achieved by the control device.

- (c) Where the Permittee subject to the provisions of 40CFR 60.758 seeks to demonstrate compliance with 40CFR 60.752(b)(2)(iii)(B)(1) through use of a boiler or process heater of any size: a description of the location at which the collected gas vent stream is introduced into the boiler or process heater over the same time period of the performance testing.
 - (d) Where the Permittee subject to the provisions of 40CFR 60.758 seeks to demonstrate compliance with 40CFR 60.752(b)(2)(iii)(A) through use of an open flare, the flare type (i.e., steam-assisted, air -assisted, or nonassisted), all visible emission readings, heat content determination, flow rate or bypass flow rate measurements, and exit velocity determinations made during the performance test as specified in 40CFR 60.18; continuous records of the flare pilot flame or flare flame monitoring and records of all periods of operations during which the pilot flame of the flare flame is absent.
- (3) Except as provided in 40 CFR 60.752(b)(2)(i)(B), the Permittee of a controlled landfill subject to the provisions of this subpart shall keep for 5 years up-to-date, readily accessible continuous records of the equipment operating parameters specified to be monitored in 40CFR 60.756 as well as up-to-date, readily accessible records for periods of operation during which the parameter boundaries established during the most recent performance test are exceeded.
- (a) The following constitute exceedances that shall be recorded and reported under 40CFR 60.757(f):

For enclosed combustors except for boilers and process heaters with design heat input capacity of 44 megawatts (150 million British thermal unit per hour) or greater, all 3-hour periods of operation during which the average combustion temperature was more than 28°C below the average combustion temperature during the most recent performance test at which compliance with 40CFR 60.752(b)(2)(iii) was determined.

For boilers or process heaters, whenever there is a change in the location at which the vent stream is introduced into the flame zone as required under 40CFR 60.758(b)(3)(i) of this section
 - (b) The Permittee subject to 40CFR 60.758 shall keep up-to-date, readily accessible continuous records of the indication of flow to the control device or the indication of bypass flow or records of monthly inspections of car-seals or lock-and-key configurations used to seal bypass lines, specified under 40CFR 60.756.
 - (c) The Permittee subject to the provisions of 40CFR 60.758 who uses a boiler or process heater with a design heat input capacity of 44 megawatts or greater to comply with 40CFR 60.752(b)(2)(iii) shall keep an up-to-date, readily accessible record of all periods of operation of the boiler or process heater. (Examples of such records could include records of steam use, fuel use, or monitoring data collected pursuant to other State, local, Tribal or Federal regulatory requirements.)
 - (d) The Permittee seeking to comply with the provisions of 40CFR 60.758 by use of an open flare shall keep up-to-date, readily accessible continuous records of the flame or flare pilot flame monitoring specified under 40CFR 60.756(c), and up-to-date, readily accessible records of all periods of operation in which the flame or

flare pilot flame is absent.

- (4) Except as provided in 40 CFR 60.752(b)(2)(i)(B), the Permittee subject to the provisions of this subpart shall keep for the life of the collection system an up-to-date, readily accessible plot map showing each existing and planned collector in the system and providing a unique identification location label for each collector.
 - (a) The Permittee subject to the provisions of 40CFR 60.758 shall keep up-to-date, readily accessible records of the installation date and location of all newly installed collectors as specified in 40CFR 60.755 (b).
 - (b) The Permittee subject to the provisions of 40CFR 60.758 shall keep readily accessible documentation of the nature, date of deposition, amount, and location of asbestos-containing or nondegradable waste excluded from collection as provided in 40CFR 60.759 (a)(3)(i) as well as any non-productive areas excluded from collection as provided in 40CFR 60.759 (a)(3)(ii).
- (5) Except as provided in 40 CFR 60.752(b)(2)(i)(B), the Permittee subject to the provisions of this subpart shall keep for at least 5 years up-to-date, readily accessible records of all collection and control system exceedances of the operational standards in 40CFR 60.753, the reading in the subsequent month whether or not the second reading is an exceedance, and the location of each exceedance.
- (6) Landfill owners or operators who convert design capacity from volume to mass or mass to volume to demonstrate that landfill design capacity is less than 2.5 million megagrams or 2.5 million cubic meters, as provided in the definition of "design capacity", shall keep readily accessible, on-site records of the annual recalculation of site-specific density, design capacity, and the supporting documentation. Off-site records may be maintained if they are retrievable within 4 hours. Either paper copy or electronic formats are acceptable.

Victory Environmental Services, Inc.
Terre Haute, Indiana
Reviewer: Darren Woodward

First Significant Permit Modification
SPM No. 167-17803-00116

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OP No. T167-9639-00116

**Indiana Department of Environmental Management
Office of Air Quality
and
Vigo County Air Pollution Control**

Technical Support Document (TSD) for a Part 70 Significant Source Modification and Significant Permit Modification to a Part 70 Operating Permit.

Source Background and Description

Source Name:	Victory Environmental Services, Inc.
Source Location:	12247 South Mill Street, Terre Haute, Indiana 47802
County:	Vigo
SIC Code:	4953
Operation Permit No.:	T167-9639-00116
Operation Permit Issuance Date:	July, 12, 1999
Significant Source Modification No.:	167-14898-00116
Significant Permit Modification No.:	167-17803-00116
Permit Reviewer:	Darren Woodward

Vigo County Air Pollution Control (VCAPC) has reviewed a modification application from Victory Environmental Services, Inc. relating to the construction and operation of the following emission units and pollution control devices:

A system consisting of vertical gas extraction wells connected by a network of header piping that will be used to transport the collected landfill gas to a central point of service. Landfill gas will be collected from the landfill by inducing a vacuum on the wellfield using an in-line blower system. The collected landfill gas will then be routed to a utility flare with the following parameters: a maximum inlet flow of 3,000 scfm, design flame temperature of 1,400°F, flare tip height of 34 feet, flare tip diameter of 1 foot, spark plug igniter system, and a destruction efficiency of 98%.

Existing Approvals

The source was issued a Part 70 Operating Permit (T167-9639-00116) on July 12, 1999.

Enforcement Issue

There are no enforcement actions pending.

Recommendation

The staff recommends to the Commissioner that the Part 70 Significant Source Modification and the Part 70 Significant Permit Modification be approved. This recommendation is based on the following facts and conditions:

Unless otherwise stated, information used in this review was derived from the application and additional information submitted by the applicant.

An application for the purposes of this review was received on October 2, 2001.

Emission Calculations

The calculations submitted by the applicant have been verified and found to be accurate and correct. These calculations are provided in Appendix A of this document on pages 6 and 7.

Potential To Emit of Modification

Pursuant to 326 IAC 2-1.1-1(16), Potential to Emit is defined as “the maximum capacity of a stationary source to emit any air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of a source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or type or amount of material combusted, stored, or processed shall be treated as part of its design if the limitation is enforceable by the U. S. EPA.”

This table reflects the PTE before controls. Control equipment is not considered federally enforceable until it has been required in a federally enforceable permit.

Pollutant	Potential To Emit (tons/year)
PM	3.64
SO ₂	6.60
VOC	0.830
CO	160
NO _x	29.0

HAP's	Potential To Emit (tons/year)
1,1,1-Trichloroethane (methyl chloroform)	2.7 E-3
1,1,2,2-Tetrachloroethane	7.7E-3
1,1-Dichloroethane (ethylidene dichloride)	9.7E-3
1,1-Dichloroethene (vinylidene chloride)	8.1E-4
1,2-Dichloroethane (ethylene dichloride)	1.7E-3
1,2-Dichloropropane (propylene dichloride)	8.4E-4
Acrylonitrile	2.1E-3
Benzene	9.3E-4
Carbon Disulfide	2.8E-4
Carbon Tetrachloride	2.6E-5
Carbonyl Sulfide	1.8E-4
Chlorobenzene	1.2E-3
Chloroethane (ethyl chloride)	3.3E-3
Chloroform	1.5E-4
Dichlorobenzene	1.3E-3
Dichloromethane (methylene chloride)	5.0E-2
Ethylbenzene	3.0E-3
Hexane	3.5E-3
Hydrogen Sulfide	7.5E-3
Mercury	1.2E-4
Methyl Ethyl Ketone	3.2E-3
Methyl Isobutyl Ketone	1.2E-3
Perchloroethylene (tetrachloroethylene)	2.6E-2
Toluene	2.3E-2
Trichloroethylene (trichloroethene)	1.5E-2
Vinyl Chloride	1.9E-2
Xylenes	8.0E-3

Hydrogen Chloride	3.18
TOTAL	3.37

Justification for Modification

The Part 70 Operating permit is being modified through this Part 70 Significant Source Modification. This modification is being performed pursuant to 326 IAC 2-7-10.5(f)(4) and (7), any modification with a potential to emit greater than or equal to twenty-five (25) tons per year of any of the following pollutants: PM, PM₁₀, SO₂, NO_x, VOC, H₂S, TRS, reduced sulfur compounds, and Fluorides. Any modification with a potential to emit greater than or equal to one hundred (100) tons per year of carbon monoxide (CO).

Actual Emissions

The following table shows the actual emissions from the source. This information reflects the 2001 OAQ emission data.

Pollutant	Actual Emissions (tons/year)
PM	16.1
SO ₂	NA
VOC	6.89
CO	NA
NO _x	NA
HAP (specify)	NA

County Attainment Status

The source is located in Vigo County.

Pollutant	Status
PM	attainment
SO ₂	attainment
NO ₂	attainment
Ozone	attainment
CO	attainment
Lead	attainment

- (a) Volatile organic compounds (VOC) are precursors for the formation of ozone. Therefore, VOC emissions are considered when evaluating the rule applicability relating to the ozone standards. Vigo County has been designated as attainment or unclassifiable for ozone. Therefore, VOC emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.

Source Status

Existing Source PSD Definition (emissions after controls, based upon 8760 hours of operation per year at rated capacity and/or as otherwise limited):

Pollutant	Emissions (tons/year)
PM	less than 100
PM-10	less than 100

SO ₂	less than 100
VOC	less than 100
CO	less than 100
NO _x	less than 100

- (a) This existing source is not a major stationary source because no attainment regulated pollutant is emitted at a rate of 250 tons per year or more, and it is not one of the 28 listed source categories.
- (b) These emissions are based upon Victory Environmental Services, Inc.'s Part 70 Permit (T167-9639-00116), issued July 12, 1999.

Potential to Emit of Modification After Issuance

The table below summarizes the potential to emit, reflecting all limits, of the significant emission units after controls. The control equipment is considered federally enforceable only after issuance of this Part 70 source modification.

	Potential to Emit (tons/year)					
Process/facility	PM	SO ₂	VOC	CO	NO _x	HAPs
Flare	3.64	6.61	0.832	160	29.5	3.18/3.37
Emission Thresholds	250	250	250	250	250	10/25

This modification to an existing minor stationary source is not major because the emission increase is less than the PSD significant levels. Therefore, pursuant to 326 IAC 2-2, the PSD requirements do not apply.

Federal Rule Applicability

- (a) There are no New Source Performance Standards (NSPS)(326 IAC 12 and 40 CFR Part 60) applicable to this proposed modification.
- (b) There are no National Emission Standards for Hazardous Air Pollutants (NESHAPs)(326 IAC 14 and 40 CFR Part 63) applicable to this proposed modification.

State Rule Applicability - Entire Source

326 IAC 2-4.1-1 (New source toxics control)

The potential to emit Hazardous Air Pollutants (HAP) is less than ten (10) tons per year of any single HAP and less than twenty-five (25) tons per year of any combination of HAPs. Therefore, 326 IAC 2-4.1-1 is not applicable.

326 IAC 5-1 (Opacity Limitations)

Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary Alternative Opacity Limitations), opacity shall meet the following, unless otherwise stated in this permit:

- (a) Opacity shall not exceed an average of forty percent (40%) any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.
- (b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15)

minutes (sixty (60) readings) as measured according to 40 CFR 60, Appendix A, method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.

State Rule Applicability - Individual Facilities

There are no Indiana Administrative Codes (IAC) applicable to the individual facilities proposed in this modification.

Compliance Requirements

Permits issued under 326 IAC 2-7 are required to ensure that sources can demonstrate compliance with applicable state and federal rules on a more or less continuous basis. All state and federal rules contain compliance provisions, however, these provisions do not always fulfill the requirement for a more or less continuous demonstration. When this occurs IDEM, OAQ, in conjunction with the source, must develop specific conditions to satisfy 326 IAC 2-7-5. As a result, compliance requirements are divided into two sections: Compliance Determination Requirements and Compliance Monitoring Requirements.

Compliance Determination Requirements in Section D of the permit are those conditions that are found more or less directly within state and federal rules and the violation of which serves as grounds for enforcement action. If these conditions are not sufficient to demonstrate continuous compliance, they will be supplemented with Compliance Monitoring Requirements, also Section D of the permit. Unlike Compliance Determination Requirements, failure to meet Compliance Monitoring conditions would serve as a trigger for corrective actions and not grounds for enforcement action. However, a violation in relation to a compliance monitoring condition will arise through a source's failure to take the appropriate corrective actions within a specific time period.

Conclusion

The construction and operation of this proposed modification shall be subject to the conditions of the attached proposed Part 70 Significant Source Modification No. 167-14898-00116, and Part 70 Significant Permit Modification No. 167-17803-00116.

Open Flare Emissions
Fuel and Equipment
Victory Environmental Landfill
Vigo County, Indiana

Standard Conditions

standard temperature	60 °F	520 °R
gas constant (R)	0.7302 atm-ft ³ /lb-mol°R	
pressure	1 atm	

LFG Assumptions

operation period	365 days	
operation period	8,760 hours	
% Methane	55%	
LFG inlet flow	3,000 scfm	
expected LFG temp	80 °F	540 °R

Inlet LFG Calculations

LFG inlet flow	1,577 MMscf/year	
LFG heating value ^a	550 btu/scf	
heat input for period	867,240 MMbtu/year	
heat input	99.0 Mmbtu/hr	

Flare Design Parameters

design flame temperature ^b	1,400 °F	1,860 °R
inlet flow	3,000 scfm	
flare tip flow (at 100°F inlet flow)	3,115 acfm	
moisture ^c	8%	
inlet flow (dry)	2,760 dscfm	78,155 dslm
flare tip diameter ^b	1.00 ft	0.305 m
flare tip velocity	3,967 ft/min	20.2 m/s
flare tip height agl ^b	34 ft	10.36 m

^aBased on the heating value of the methane content (source: AP-42, 9/97)

^bSource: flare manufacturer

^cSource: "Landfill Gas Emissions," Louis Kalani and Ray Nardelli, LFG Specialties, presented at 20th Annual Landfill Gas Symposium (SWANA), 3/25/96

Open Flare Emissions
Criteria Pollutant Emissions
Victory Environmental Landfill
Vigo County, Indiana

LFG flow	3,000 scfm
Heat Input to Flare(s)	99 Mmbtu/hr
<u>PM₁₀ Emission Rate</u>	
PM emission factor ^c	80 mg/dsl inlet
PM emission rate	0.83 lb/hr; 3.64 tons/yr
<u>VOC Emission Rate</u>	
NMOC conc inlet gas ^b	595 ppmv
VOC fraction of NMOC ^b	39%
VOC concentration in inlet gas	232 ppmv
MW hexane	86 lb/lb-mol
mass VOC inlet gas	9.46 lb/hr
destruction efficiency	98 %
VOC emission rate	0.19 lb/hr; 0.832 ton/yr
<u>SO₂ Emission Rate</u>	
Total Sulfur in inlet gas ^a	49.6 ppmv
SO₂ emission rate	1.51 lb/hr; 6.61 tons/yr
<u>NO₂ Emission Rate</u>	
NO ₂ emission factor ^d	0.068 lb/MMbtu
NO₂ emission rate	6.73 lb/hr; 29.5 tons/yr
<u>CO Emission Rate</u>	
CO emission factor ^d	0.37 lb/MMbtu
CO emission rate	36.63 lb/hr; 160 tons/yr

^aInlet H₂S, carbon disulfide, carbonyl sulfide, dimethyl sulfide, and methyl mercaptan concentration from AP-42 (11/98), table 2.4-1.

^bSource: AP-42 (11/98), table 2.4-2

^cSource: draft AP-42 (9/95), table 13.5-1, PM emission factgor for lightly-smoking flares (x 2 for safety factor).

^dSource: flare manufacturer